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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,526	05/16/2001	Jae Wook Lee	K-284	9754

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FLESHNER & KIM LLP
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SUITE 125
CHANTILLY, VA 20151

EXAMINER

PERRY, ANTHONY T

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/855,526

Applicant(s)

LEE, JAE WOOK

Examiner

Anthony T Perry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Response to Amendment

Applicant's amendment to the specification, filed on August 23, 2002 has been entered.

Applicant's amendment to the claims, filed on August 23, 2002 have been entered.

Claims 9-16 have been added.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Saita (US 6,054,803).

Regarding claims 1, 3, 10, 11, Fig. 5 of the Saita reference discloses a shadow mask assembly 1 that comprises a shadow mask 8 having an effective area with slots 9 and a non-effective area without slots extending from the periphery of the effective area. The assembly also includes a frame fixing body 2,3 and 4 for tensioning the shadow mask 8. As seen from the drawing the shadow mask 8 is welded to the upper part of main frame 2,3 with the outermost edge of the shadow mask in the direction of the non-effective area lined up with the outermost edge of the main frame 2,3 in the same direction. The distance of the non-effective area is shown to be slightly less than twice the width of the main frame 2,3 upper portion.

Therefore it is clear that t_w/t_M satisfies the relation: $0.30 \leq t_w/t_M \leq 0.99$.

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Where " t_M " is the shortest distance from the outermost end of the main frame 2,3 welded to the shadow mask 8 to the interface between the effective area and the non-effective area and " t_w " is the width of the mask welding part formed at the upper part of the main frame 2,3.

Regarding claim 2, Fig. 5 of the Saita reference shows the shadow mask 8 welded 17 to the main frame 2,3 in the center of the upper portion at a point $t_w/2$.

Regarding claim 4, Fig. 5 of the Saita reference shows a shadow mask assembly 1 wherein the main frame 2,3 have an upper part as the welding part width t_w and one side inwardly sloped about the shadow mask 8 so that the side cross section has the upper and lower surface being parallel with each other.

Regarding claim 9, the shadow mask assembly is for use in a cathode ray tube (see abstract).

Regarding claim 12, Fig. 5 of the Saita reference shows the mask welding part comprising a portion of the shadow mask welded to the upper part of the main frame along a full length and width of the upper part.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saita (US 6,054,803).

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Regarding claim 5, Saito discloses a frame 2,3 that has a lower part perpendicular to the upper part which has the welding width and one end bent parallel with the mask welding width. Saita does not specifically state the use of frame made of a plate with an outer end bent again to closely contact with the perpendicular part to form a slope inward to the shadow mask. However it is noted, that the applicant's specific use of a frame made of a plate that has an outer end bent again to closely contact with the perpendicular part to form a slope inward to the shadow mask, does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found it obvious to select any type of frame that has sufficient support strength to provide for a vibration-proof shadow mask.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saita (US 6,054,803) in view of Ragland (US 5,644,192) in further view of Takagi (US 5,406,168).

Regarding claim 5, Saito discloses a frame 2,3 that has a lower part perpendicular to the upper part which has the welding width and one end bent parallel with the mask welding width. Saita does not specifically state the use of frame made of a plate with an outer end bent again to closely contact with the perpendicular part to form a slope inward to the shadow mask. However, Ragland discloses frame member in Fig. 6 that has an outer end bent again to closely contact with the perpendicular part to form a slope inward to the shadow mask. Fig. 6 shows a part 56 that is angled between the two flanges 52 and 54 of the first part 50, to form a triangle therewith in cross-section. The second part 56 intersects the first flange 52 a predetermined distance from the distal end of the flange 52, to permit some flexibility of the cantilevered portion of the flange 52 (col. 3, lines 5-14).

Accordingly, it would have been obvious for one of ordinary skill in the art at the time the invention was made to have had a portion bent to come in close contact with the perpendicular part to form a slope inward to the shadow mask so as to permit some flexibility of the perpendicular portion.

Ragland does not specifically state the use of a frame made of a plate in which the upper part is the welding portion. However, Fig. 3 of the Takagi reference discloses a frame assembly including belt-like metal plate 209 to quickly attenuate the vibration of the grid elements 205. More specifically, the belt-like metal plate 209 is arranged on the side frame portions 201 to cross the array of the grid elements 205 in such a manner that one side of the plate 209 extends from an upper portion of a corresponding one of the side frame portion 201 toward the inside of the frame, and each of the portions extending from the side frame portion 201 is in contact with one surface the end portion of each grid element 205. With this arrangement, the grid elements 205 are vibrated on the extended portions, of the belt-like metal plates 209, which serve as fulcrums, while they are vibrated in the direction indicated by the Y arrow with support portions. This structure provides a CRT grid apparatus which prevents vibration and deformation of grid elements.

Accordingly, it would have been obvious for one of ordinary skill at the time the invention was made, to provide a frame plate for the mask to be welded to, in order to prevent vibration and deformation of the grid elements.

Claims 6-8 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saita (US 6,054,803) in view of Dietch et al. (US 4,737,681).

Regarding claims 6, 8, 14 and 15, Fig. 5 of the Saita reference discloses a shadow mask assembly 1 that comprises a shadow mask 8 having an effective area with slots 9 and a non-effective area without slots extending from the periphery of the effective area. The assembly also includes a frame fixing body 2,3 and 4 for tensioning the shadow mask 8. As seen from the drawing the shadow mask 8 is welded to the upper part of main frame 2,3 with the outermost edge of the shadow mask in the direction of the non-effective area lined up with the outermost edge of the main frame 2,3 in the same direction. The distance of the non-effective area is shown to be slightly less than twice the width of the main frame 2,3 upper portion.

Therefore it is clear that t_w/t_M satisfies the relation: $0.30 \leq t_w/t_M \leq 0.99$.

Where " t_M " is the shortest distance from the outermost end of the main frame 2,3 welded to the shadow mask 8 to the interface between the effective area and the non-effective area and " t_w " is the width of the mask welding part formed at the upper part of the main frame 2,3.

The Saita reference does not specifically state the use of a shadow mask attached to rails (frame) which are attached to the panel of the CRT.

However, the Dietch reference shows a shadow mask 108 welded to the rear surface of the rail 98. The rails 98 are fixed with glass frit along each rear side of the panel 101. The cement described heretofore as being used for cementing the shadow mask support structures to the faceplate, preferably comprises a devitrifying glass frit such as that supplied Owens-Illinois, Toledo, Ohio, under the designation CV-685. Alternately, the cement may comprise a cold-setting cement of the type supplied by Sauereisen Cements Company of Pittsburgh, Pa. The use of a devitrifying glass frit provides for the integral bonding of the ceramic of the mask support structure to the glass of the faceplate, as both are ceramics by classification, and hence capable

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of the intimate bonding defined as "welding"; that is, by intimately consolidating the components of the two ceramics. By its integral attachment to the glass, the ceramic mask-supporting structure according to the invention derives support from the glass, making the structure capable of withstanding the restorative forces inherent in the high tension of the shadow mask (col. 8, lines 30-54).

Accordingly, it would have been obvious for one of ordinary skill in the art at the time the invention was made to have attached the shadow mask to rails which are attached to the panel using a glass frit so as to provide a structure capable of withstanding forces inherent in a high tension shadow mask.

Regarding claim 7, Fig. 5 of the Saita reference shows the shadow mask 8 welded 17 to the main frame 2,3 in the center of the upper portion at a point $t_w/2$.

Regarding claim 13, Saita teaches that the shadow mask assembly is for use in a cathode ray tube (see abstract).

Regarding claim 16, Fig. 5 of the Saita reference shows the mask welding part comprising a portion of the shadow mask welded to the upper part of the main frame 3,2 along a full length and width of the upper part.

Response to Arguments

Applicant's arguments filed May 2, 2003 have been fully considered but they are not persuasive.

The applicant seems to be interpreting t_w as being the shadow mask's welding width. However, that is not what is claimed. t_w , as claimed, is the width of the mask welding part, or the width of the non-effective portion that is welded to the top of the main frame.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is (703) 305-1799. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (703) 305-4794. The fax phone number for this Group is (703) 308-7382.

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Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [Anthony.perry@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



Anthony Perry
Patent Examiner
Art Unit 2879
May 19, 2003



VIP PATEL
PRIMARY EXAMINER